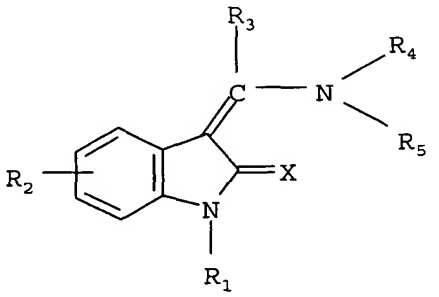
Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1 – 11 (canceled)

Claim 12 (new): A compound of formula



(I),

X denotes an oxygen or sulphur atom,

R_1 denotes a hydrogen atom, C_{1-3}-alkyl or hydroxy group,

R_2 denotes a hydrogen, fluorine, chlorine, bromine or iodine atom, a C_{1-3}-alkyl or nitro group,

R_3 denotes a phenyl or naphthyl group, each of which may be mono- or disubstituted by fluorine, chlorine, bromine or iodine atoms, by C_{1-3}-alkyl, C_{1-3}-alkoxy, carboxy, cyano, trifluoromethyl, nitro, amino, C_{1-3}-alkylamino, di-(C_{1-3}-alkyl)-amino, C_{1-3}-alkylsulphonylamino, amino-C_{1-3}-alkyl, 2-carboxy-phenylcarbonylaminomethyl, C_{1-3}-alkylamino-C_{1-3}-alkyl, C_{2-4}-alkanoylamino-C_{1-3}-alkyl, N-(C_{2-4}-alkanoyl)-C_{1-3}-alkylamino-C_{1-3}-alkyl, di-(C_{1-3}-alkyl)-amino-C_{1-3}-alkyl, carboxy-C_{2-3}-alkenyl, N-(carboxy-C_{1-3}-alkyl)-aminocarbonyl, N-(carboxy-C_{1-3}-alkyl)-N-(C_{1-3}-alkyl)-

aminocarbonyl or imidazolyl-C_{1-3}-alkyl groups, while the substituents may be identical or different,

R_4 denotes a hydrogen atom or a C_{1-3}-alkyl group and

R_5 denotes a phenyl or naphthyl group optionally substituted by a C_{1-3}-alkyl group, each of which is additionally substituted in the aromatic moiety

by a fluorine, chlorine, bromine or iodine atom, by a C_{1-3}-alkyl, C_{1-3}-alkoxy, cyano, nitro or trifluoromethyl group,

by a C_{1-3}-alkoxy group which is substituted by a carboxy, aminocarbonyl, C_{1-3}-alkylaminocarbonyl or di-(C_{1-3}-alkyl)-aminocarbonyl group or in the 2 or 3 position by an amino, C_{1-3}-alkylamino, di-(C_{1-3}-alkyl)-amino, phenyl-C_{1-3}-alkylamino, N-(phenyl-C_{1-3}-alkyl)-N-(C_{1-3}-alkyl)-amino, pyrrolidino, piperidino or hexamethyleneimino group,

by a C_{2-3}-alkenyl group optionally substituted by a di-(C_{1-3}-alkyl)-amino group, which may additionally be substituted in the alkenyl moiety by a chlorine or bromine atom,

by a C_{2-3}-alkynyl group optionally substituted by a di-(C_{1-3}-alkyl)-amino group,

by a C_{1-3}-alkyl group which is substituted by a 3- to 7-membered cycloalkyleneimino group, by a dehydropiperidino, morpholino, thiomorpholino, 1-oxido-thiomorpholino, 1,1-dioxido-thiomorpholino, piperazino, N-(C_{1-3}-alkyl)-piperazino, N-(C_{1-3}-alkanoyl)-piperazino or N-(C_{1-5}-alkoxycarbonyl)-piperazino group, whilst the abovementioned substituents may be substituted by a C_{1-3}-alkyl, phenyl or phenyl-C_{1-3}-alkyl group and the abovementioned piperidino or hexamethyleneimino groups may additionally be substituted by a C_{1-3}-alkyl group

or in the 3 or 4 position by a hydroxy, C_{1-3}-alkoxy, hydroxy-C_{1-3}-alkyl, carboxy, aminocarbonyl, N-(C_{1-3}-alkyl)-aminocarbonyl or N,N-di-(C_{1-3}-alkyl)-aminocarbonyl group,

by a C_{1-3}-alkyl group substituted by a hydroxy, C_{1-3}-alkoxy, carboxy or cyano group, whilst a C_{1-3}-alkyl group substituted by a carboxy group may additionally be substituted in the alkyl moiety by an amino or C_{1-5}-alkoxycarbonylamino group,

by an aminocarbonylamino, amidino or guanidino group optionally substituted by one or two C_{1-3}-alkyl groups,

by a piperidino, hexamethyleneimino, morpholino, piperazino or N-(C_{1-3}-alkyl)-piperazino group,

by a formyl, carboxy or trifluoroacetyl group,

by a carbonyl group which

is substituted by a C_{1-3}-alkyl, C_{1-3}-alkoxy-C_{1-3}-alkyl, amino, C_{1-5}-alkylamino or di-(C_{1-3}-alkyl)-amino group, while the abovementioned amino and C_{1-3}-alkylamino groups may additionally be substituted at the nitrogen atom by a carboxy-C_{1-3}-alkyl group or by a C_{2-3}-alkyl group which may be substituted in the 2 or 3 position by a hydroxy, C_{1-3}-alkoxy, amino, C_{1-3}-alkylamino or di-(C_{1-3}-alkyl)-amino group,

by a pyrrolidinocarbonyl, piperidinocarbonyl, hexamethyleneiminocarbonyl, morpholinocarbonyl, piperazinocarbonyl, N-(C_{1-3}-alkyl)-piperazinocarbonyl or N-(phenyl-C_{1-3}-alkyl)-piperazinocarbonyl group,

by an amidosulphonyl, pyrrolidinosulphonyl, piperidinosulphonyl or hexamethyleneiminosulphonyl group, by a C_{1-3}-alkylamidosulphonyl or di-(C_{1-3}-alkyl)-amidosulphonyl group, wherein an alkyl moiety may be substituted in each case by a carboxy, aminocarbonyl, N-(C_{1-3}-alkyl)-aminocarbonyl or N,N-di-(C_{1-3}-alkyl)-aminocarbonyl group or, in the 2 or 3 position, by a C_{1-3}-alkylamino or di-(C_{1-3}-alkyl)-amino group,

by an amino, C_{1-5}-alkylamino, C_{3-7}-cycloalkylamino, phenyl-C_{1-3}-alkylamino, phenylamino, 6-membered heteroarylamino, amino-C_{1-3}-alkyl, N-(C_{1-5}-alkyl)-amino-C_{1-3}-alkyl, di-(C_{1-5}-alkyl)-amino-C_{1-3}-alkyl, C_{3-7}-cycloalkylamino-C_{1-3}-alkyl, N-(C_{1-5}-alkyl)-C_{3-7}-cycloalkylamino-C_{1-3}-alkyl, phenylamino-C_{1-3}-alkyl, N-(C_{1-3}-alkyl)-phenylamino-C_{1-3}-alkyl, phenyl-C_{1-3}-alkylamino-C_{1-3}-alkyl or N-(C_{1-5}-alkyl)-phenyl-C_{1-3}-alkylamino-C_{1-3}-alkyl group or by a 6-membered heteroarylamino-C_{1-3}-alkyl group optionally substituted at the nitrogen atom by a C_{1-5}-alkyl group, while the N-alkyl moiety of the abovementioned groups may be substituted in each case by a cyano, carboxy, aminocarbonyl, C_{1-3}-alkylaminocarbonyl, di-(C_{1-3}-alkyl)-aminocarbonyl, 2-[di-(C_{1-3}-alkyl)-amino]-ethylaminocarbonyl, 3-[di-(C_{1-3}-alkyl)-amino]-propylaminocarbonyl, N-{2-[di-(C_{1-3}-alkyl)-amino]-ethyl}-N-(C_{1-3}-alkyl)-aminocarbonyl or N-{3-[di-(C_{1-3}-alkyl)-amino]-propyl}-N-(C_{1-3}-alkyl)-aminocarbonyl group or in the 2 or 3 position by a hydroxy, C_{1-3}-alkoxy, amino, C_{1-3}-alkylamino, di-(C_{1-3}-alkyl)-amino, pyrrolidino, piperidino, hexamethyleneimino, morpholino, piperazino or N-(C_{1-3}-alkyl)-piperazino group and the nitrogen atom of the abovementioned amino, N-(C_{1-5}-alkyl)-amino, C_{3-7}-cycloalkylamino, phenyl-C_{1-3}-alkylamino, phenylamino, 6-membered heteroarylamino, amino-C_{1-3}-alkyl- and N-(C_{1-5}-alkylamino)-C_{1-3}-alkyl groups may additionally be substituted

by a C_{1-5}-alkoxycarbonyl group,

by a formyl, trifluoroacetyl or benzoyl group,

by a carboxy-C_{1-3}-alkyl, aminocarbonyl-C_{1-3}-alkyl, N-(C_{1-3}-alkyl)-aminocarbonyl-C_{1-3}-alkyl or N,N-di-(C_{1-3}-alkyl)-aminocarbonyl-C_{1-3}-alkyl group,

by a C_{1-5}-alkyl group which may be substituted, except in the 1 position, by a hydroxy, C_{1-3}-alkoxy, amino, C_{1-3}-alkylamino or di-(C_{1-3}-alkyl)-amino group,

by a C_{2-4}-alkanoyl group which may be substituted in the alkanoyl moiety by a carboxy, hydroxy, C_{1-3}-alkoxy, phenyl, amino, phthalimido, C_{1-3}-alkylamino, di-(C_{1-3}-alkyl)-amino, pyrrolidino, piperidino, hexamethyleneimino or morpholino group or by a piperazino group optionally substituted at the nitrogen atom by a C_{1-3}-alkyl or phenyl-C_{1-3}-alkyl group, while the alkyl moiety of the abovementioned C_{1-3}-alkylamino- and di-(C_{1-3}-alkyl)-amino substituents may be substituted in the 2 or 3 position by a hydroxy, C_{1-3}-alkoxy, amino, C_{1-5}-alkoxycarbonylamino, C_{1-3}-alkylamino, di-(C_{1-3}-alkyl)-amino, phenyl, pyrrolidino, piperidino, hexamethyleneimino or morpholino group,

by a C_{1-5}-alkylsulphonyl group in which the alkyl moiety may be substituted except in the 1 position by a di-(C_{1-3}-alkyl)-amino, pyrrolidino, piperidino, hexamethyleneimino or morpholino group,

by a phenyl-(C_{1-3})-alkylsulphonyl or phenylsulphonyl group optionally substituted in the phenyl moiety by a fluorine, chlorine or bromine atom or by a C_{1-3}-alkyl or C_{1-3}-alkoxy group,

while additionally any carboxy, amino or imino group present may be substituted by a group which can be cleaved *in vivo*,

the isomers and the salts thereof.

Claim 13 (new): The compound of formula I according to claim 12, wherein

X denotes an oxygen or sulphur atom,

R_1 denotes a hydrogen atom, a C_{1-3}-alkyl, hydroxy, C_{1-4}-alkoxycarbonyl or C_{2-4}-alkanoyl group,

R_2 denotes a hydrogen, fluorine, chlorine, bromine or iodine atom, a C_{1-3}-alkyl or nitro group,

R_3 denotes a phenyl or naphthyl group, each of which may be mono- or disubstituted by fluorine, chlorine, bromine or iodine atoms, by C_{1-3}-alkyl, imidazolylmethyl, 2-carboxy-ethenyl, 2-(C_{1-3}-alkoxycarbonyl)-ethenyl, C_{1-3}-alkoxy, cyano, carboxy, C_{1-3}-alkoxycarbonyl, trifluoromethyl, nitro, amino, phthalimidomethyl, 2-carboxy-phenylcarbonylaminomethyl, C_{1-3}-alkylamino, di-(C_{1-3}-alkyl)-amino, C_{1-3}-alkylsulphonylamino, amino-C_{1-3}-alkyl, C_{1-3}-alkylamino-C_{1-3}-alkyl, C_{2-4}-alkanoyl-amino-C_{1-3}-alkyl, N-(C_{2-4}-alkanoyl)-C_{1-3}-alkylamino-C_{1-3}-alkyl, di-(C_{1-3}-alkyl)-amino-C_{1-3}-alkyl, carboxy-C_{1-3}-alkylaminocarbonyl or C_{1-3}-alkoxycarbonyl-C_{1-3}-alkylaminocarbonyl groups, while the substituents may be identical or different,

R_4 denotes a hydrogen atom or a C_{1-3}-alkyl group and

R_5 denotes a phenyl or naphthyl group optionally substituted by a C_{1-3}-alkyl group, each of which is additionally substituted in the aromatic moiety

by a fluorine, chlorine, bromine or iodine atom, by a C_{1-3}-alkyl, C_{1-3}-alkoxy, cyano, nitro or trifluoromethyl group, while the abovementioned alkyl group may simultaneously be substituted by a carboxy or C_{1-3}-alkoxycarbonyl group and an amino or C_{1-4}-alkoxycarbonylamino group,

a C_{1-3}-alkyl group which is substituted by a 4- to 7-membered cycloalkyleneimino group, by a dehydropiperidino, morpholino, thiomorpholino, 1-oxido-thiomorpholino, 1,1-dioxido-thiomorpholino, piperazino or N-(C_{1-4}-alkoxycarbonyl)-piperazino group, while the abovementioned piperidino, hexamethyleneimino, morpholino, thiomorpholino, 1-oxido-thiomorpholino, 1,1-dioxido-thiomorpholino- and piperazino groups may be substituted by a C_{1-3}-alkyl, phenyl or phenyl-C_{1-3}-alkyl group and the abovementioned piperidino groups may additionally be substituted by a C_{1-3}-alkyl group or in the 3 or 4 position by a hydroxy, C_{1-3}-alkoxy, hydroxy-C_{1-3}-alkyl, carboxy, aminocarbonyl, N-(C_{1-3}-alkyl)-aminocarbonyl or N,N-di-(C_{1-3}-alkyl)-aminocarbonyl group,

by a C_{1-3}-alkyl group optionally substituted by a hydroxy, C_{1-3}-alkoxy, carboxy, C_{1-3}-alkoxycarbonyl or cyano group,

by an aminocarbonylamino, amidino or guanidino group optionally substituted by one or two C_{1-3}-alkyl groups,

by a piperidino, hexamethyleneimino, morpholino, piperazino or N-(C_{1-3}-alkyl)-piperazino group,

by a formyl, carboxy, C_{1-3}-alkoxycarbonyl or trifluoroacetyl group,

by a carbonyl group which

is substituted by a C_{1-3}-alkyl, C_{1-3}-alkoxy-C_{1-3}-alkyl, amino, C_{1-5}-alkylamino or di-(C_{1-3}-alkyl)-amino group, while the abovementioned amino- and C_{1-3}-alkylamino groups may additionally be substituted at the nitrogen atom by a carboxy-C_{1-3}-alkyl or C_{1-3}-alkoxycarbonyl-C_{1-3}-alkyl group or by a C_{2-3}-alkyl group which may be substituted in the 2 or 3 position by a hydroxy, C_{1-3}-alkoxy, amino, C_{1-3}-alkylamino or di-(C_{1-3}-alkyl)-amino group,

by a pyrrolidinocarbonyl, pyrrolidinosulphonyl, piperidinocarbonyl, hexamethyleneiminocarbonyl, morpholinocarbonyl, piperazinocarbonyl, N-(C_{1-3}-alkyl)-piperazinocarbonyl or N-(phenyl-C_{1-3}-alkyl)-piperazinocarbonyl group,

by an amidosulphonyl, C_{1-3}-alkylamidosulphonyl or di-(C_{1-3}-alkyl)-amidosulphonyl group, wherein an alkyl moiety may be substituted by a carboxy, C_{1-3}-alkoxycarbonyl, aminocarbonyl, C_{1-3}-alkylaminocarbonyl or di-(C_{1-3}-alkyl)-aminocarbonyl group or in the 2 or 3 position may be substituted by an amino, C_{1-3}-alkylamino or di-(C_{1-3}-alkyl)-amino group,

by an amino, C_{1-5}-alkylamino, amino-C_{1-3}-alkyl, N-(C_{1-3}-alkyl)-amino-C_{1-3}-alkyl, N-(2-hydroxyethyl)-amino-C_{1-3}-alkyl, N-(3-hydroxypropyl)-amino-C_{1-3}-alkyl, di-(C_{1-5}-alkyl)-amino-C_{1-3}-alkyl, N-(C_{3-7}-cycloalkyl)-amino-C_{1-3}-alkyl, N-(C_{3-7}-cycloalkyl)-N-(C_{1-3}-alkyl)-amino-C_{1-3}-alkyl or N-(phenyl-C_{1-3}-alkyl)-amino-C_{1-3}-alkyl group, while the N-alkyl moiety of the abovementioned groups may be substituted by a cyano, carboxy, C_{1-3}-alkylcarbonyl, aminocarbonyl, C_{1-3}-alkylaminocarbonyl, di-(C_{1-3}-alkyl)-aminocarbonyl, 2-[di-(C_{1-3}-alkyl)-amino]-ethylaminocarbonyl, 3-[di-(C_{1-3}-alkyl)-amino]-propylaminocarbonyl, N-{2-[di-(C_{1-3}-alkyl)-amino]-ethyl}-N-(C_{1-3}-alkyl)-aminocarbonyl or N-{3-[di-(C_{1-3}-alkyl)-amino]-propyl}-

N-(C_{1-3}-alkyl)-aminocarbonyl group or may be substituted in the 2 or 3 position by a hydroxy, C_{1-3}-alkoxy, amino, C_{1-3}-alkylamino, di-(C_{1-3}-alkyl)-amino or morpholino group, while the nitrogen atom of the abovementioned amino, C_{1-3}-alkylamino, amino-C_{1-3}-alkyl or N-(C_{1-5}-alkylamino)-C_{1-3}-alkyl moieties may additionally be substituted

by a C_{1-5}-alkoxycarbonyl group,

by a formyl, trifluoroacetyl or benzoyl group,

by a C_{1-5}-alkyl group which may be substituted, except in the 1 position, by a hydroxy, C_{1-3}-alkoxy, amino, C_{1-3}-alkylamino or di-(C_{1-3})-alkylamino group,

by a C_{2-4}-alkanoyl group which may be substituted in the alkanoyl moiety by a hydroxy, C_{1-3}-alkoxy, amino, C_{2-4}-alkanoylamino, C_{1-5}-alkoxycarbonylamino, phthalimido, C_{1-3}-alkylamino, di-(C_{1-3}-alkyl)-amino, N-(C_{1-3}-alkyl)-phenylamino, pyrrolidino, piperidino or morpholino group or by a piperazino group optionally substituted at the nitrogen atom by a C_{1-3}-alkyl or phenyl-C_{1-3}-alkyl group, while the N-alkyl moiety of the abovementioned groups may be substituted in the 2 or 3 position by a methoxy, di-(C_{1-3}-alkyl)-amino or morpholino group,

by a C_{1-5}-alkylsulphonyl group in which the alkyl moiety may be substituted, except in the 1 position, by a di-(C_{1-3}-alkyl)-amino, pyrrolidino, piperidino, hexamethyleneimino or morpholino group,

by a pyridinyl or pyrimidinyl group,

by a phenyl, phenyl-(C_{1-3})-alkylsulphonyl or phenylsulphonyl group optionally substituted in the phenyl moiety by a C_{1-3}-alkyl group,

by a C_{1-3}-alkoxy group which is substituted by a carboxy, C_{1-3}-alkoxycarbonyl, aminocarbonyl, C_{1-3}-alkylaminocarbonyl or di-(C_{1-3}-alkyl)-aminocarbonyl group or is substituted in the 2 or 3 position by an amino, C_{1-3}-alkylamino, di-(C_{1-3}-alkyl)-amino, N-(C_{1-3}-alkyl)-N-(phenyl-C_{1-3}-alkyl)-amino, piperidino or hexamethyleneimino group,

by a prop-1-enyl, 2-chloro-prop-1-enyl or prop-1-ynyl group which is substituted in the 3 position by a di-(C_{1-3}-alkyl)-amino group,

the isomers and the salts thereof.

Claim 14 (new): The compound of formula I according to claim 12, wherein

X denotes an oxygen atom,

R_1 denotes a hydrogen atom, a C_{1-3}-alkyl, C_{1-4}-alkoxycarbonyl or C_{2-4}-alkanoyl group,

R_2 denotes a hydrogen, fluorine, chlorine, bromine or iodine atom, a C_{1-3}-alkyl or nitro group,

R_3 denotes a phenyl group which may be mono- or disubstituted by fluorine, chlorine, bromine or iodine atoms, by C_{1-3}-alkyl, trifluoromethyl, imidazolylmethyl, 2-carboxy-ethenyl, 2-C_{1-3}-alkoxycarbonyl-ethenyl, C_{1-3}-alkoxy, cyano, carboxy, C_{1-3}-alkoxycarbonyl, nitro, amino, phthalimidomethyl, 2-carboxy-benzoylaminomethyl, C_{1-3}-alkylamino, di-(C_{1-3}-alkyl)-amino, C_{1-3}-alkylsulphonylamino, amino-C_{1-3}-alkyl, C_{1-3}-alkylamino-C_{1-3}-alkyl, C_{2-4}-alkanoylamino-C_{1-3}-alkyl, N-(C_{2-4}-alkanoyl)-C_{1-3}-alkylamino-C_{1-3}-alkyl, di-(C_{1-3}-alkyl)-amino-C_{1-3}-alkyl, carboxy-C_{1-3}-alkylaminocarbonyl or

C_{1-3}-alkoxycarbonyl-C_{1-3}-alkylaminocarbonyl groups, while the substituents may be identical or different,

R_4 denotes a hydrogen atom or a C_{1-3}-alkyl group and

R_5 denotes a phenyl or naphthyl group optionally substituted by a C_{1-3}-alkyl group, each of which is additionally substituted in the aromatic moiety

by a fluorine, chlorine, bromine or iodine atom, by a C_{1-3}-alkoxy, cyano, nitro or trifluoromethyl group,

a C_{1-3}-alkyl group which is substituted by a 4- to 7-membered cycloalkyleneimino group, by a dehydropiperidino, morpholino, thiomorpholino, 1-oxido-thiomorpholino, 1,1-dioxido-thiomorpholino, piperazino or N-(C_{1-4}-alkoxycarbonyl)-piperazino group, while the abovementioned piperidino, hexamethyleneimino, morpholino and piperazino groups may be substituted by a C_{1-3}-alkyl, phenyl or phenyl-C_{1-3}-alkyl group and the abovementioned piperidino groups may additionally be substituted by a C_{1-3}-alkyl group or may be substituted in the 3 or 4 position by a hydroxy, C_{1-3}-alkoxy, hydroxy-C_{1-3}-alkyl, carboxy, aminocarbonyl, N-(C_{1-3}-alkyl)-aminocarbonyl or N,N-di-(C_{1-3}-alkyl)-aminocarbonyl group,

by a C_{1-3}-alkyl group optionally substituted by a hydroxy, C_{1-3}-alkoxy, carboxy, C_{1-3}-alkoxycarbonyl or cyano group,

by an aminocarbonylamino, amidino or guanidino group optionally substituted by one or two C_{1-3}-alkyl groups,

by a piperidino, hexamethyleneimino, morpholino, piperazino or N-(C_{1-3}-alkyl)-piperazino group,

by a formyl, carboxy, C_{1-3}-alkoxycarbonyl or trifluoroacetyl group,

by a carbonyl group which

is substituted by a C_{1-3}-alkyl, C_{1-3}-alkoxy-C_{1-3}-alkyl, amino, C_{1-5}-alkylamino or di-(C_{1-3}-alkyl)-amino group, while the abovementioned amino and C_{1-3}-alkylamino groups may additionally be substituted at the nitrogen atom by a carboxy-C_{1-3}-alkyl, C_{1-3}-alkoxycarbonyl-C_{1-3}-alkyl or C_{1-3}-alkoxycarbonyl-C_{1-3}-alkyl group or by a C_{2-3}-alkyl group which may be substituted in the 2 or 3 position by a hydroxy, C_{1-3}-alkoxy, amino, C_{1-3}-alkylamino or di-(C_{1-3}-alkyl)-amino group,

by a pyrrolidinocarbonyl, pyrrolidinosulphonyl, piperidinocarbonyl or hexamethyleneiminocarbonyl group,

by an amidosulphonyl, C_{1-3}-alkylamidosulphonyl or di-(C_{1-3}-alkyl)-amidosulphonyl group, wherein an alkyl moiety may be substituted by a carboxy, C_{1-3}-alkoxycarbonyl or dimethylaminocarbonyl group or in the 2 or 3 position by a dimethylamino group,

by a straight-chain C_{1-2}-alkyl group which is terminally substituted by an amino, benzylamino, pyridylamino or pyrimidylamino group, by a C_{1-4}-alkylamino group in which the alkyl moiety may be substituted in position 2, 3 or 4 by a hydroxy or methoxy group, or by a C_{1-2}-alkylamino group substituted in the C_{1-2}-alkyl moiety by a carboxy, C_{1-3}-alkoxycarbonyl or di-(C_{1-3}-alkyl)-aminocarbonyl group, while in the abovementioned groups any hydrogen atom present at the amino nitrogen atom may additionally be replaced

by a C_{3-6}-cycloalkyl group, by a C_{1-4}-alkyl group in which the alkyl moiety may be substituted in position 2, 3 or 4 by a hydroxy group, by a C_{1-2}-alkylcarbonyl group optionally substituted by a methoxy, carboxy, C_{1-3}-alkoxycarbonyl, amino, methylamino, dimethylamino, acetylamino, C_{1-5}-alkoxycarbonylamino, N-methyl-C_{1-5}-alkoxycarbonylamino or morpholinocarbonylamino group, by a C_{1-5}- alkoxycarbonyl, C_{1-4}-alkylsulphonyl, phenylsulphonyl or tolylsulphonyl group,

by a 3-dimethylaminopropyl or 3-dimethylamino-prop-1-enyl group,

by an ethyl group which is substituted in the 1 position by an amino or C_{1-5}-alkoxycarbonylamino group,

by an ethyl group which is substituted in the 2 position by an amino or C_{1-5}-alkoxycarbonylamino group and by a carboxy or C_{1-3}-alkoxycarbonyl group,

by an amino or C_{1-3}-alkylamino group in which the alkyl moiety may be substituted by a cyano, carboxy, C_{1-3}-alkoxycarbonyl, aminocarbonyl, methylaminocarbonyl or dimethylaminocarbonyl group or may be substituted in the 2 or 3 position by an amino, methylamino, dimethylamino, acetylamino, N-methyl-acetylamino or morpholino group, by an N-(C_{1-3}-alkyl)-aminocarbonyl or N-(C_{1-3}-alkyl)-methylaminocarbonyl group optionally substituted in the 2 or 3 position of the C_{1-3}-alkyl moiety by a dimethylamino group, while any hydrogen atom present at the amino nitrogen atom in the abovementioned groups may additionally be replaced

by a formyl, trifluoroacetyl, benzoyl, C_{1-4}-alkoxycarbonyl or C_{1-4}-alkylaminocarbonyl group,

by a C_{2-4}-alkanoyl group which may be terminally substituted by an amino, acetylamino, C_{1-4}-alkoxycarbonylamino, pyrrolidino, piperidino, morpholino, piperazino, 4-methylpiperazino, 4-benzylpiperazino or phthalimido group or by a C_{1-3}-alkylamino, N-acetyl-C_{1-3}-alkyl-amino or di-(C_{1-3}-alkyl)-amino group, while in the abovementioned C_{1-3}-alkylamino, N-acetyl-C_{1-3}-alkyl-amino- and di-(C_{1-3}-alkyl)-amino groups any C_{1-3}-alkyl moiety may additionally be substituted by a phenyl group or in the 2 or 3 position by a methoxy, dimethylamino or morpholino group,

by a C_{1-4}-alkylsulphonyl group in which the alkyl moiety may additionally be substituted in the 2 or 3 position by a dimethylamino, piperidino or morpholino group,

by a phenylsulphonyl or toluenesulphonyl group,

by a C_{1-3}-alkoxy group which is substituted by a carboxy, C_{1-3}-alkoxycarbonyl, aminocarbonyl, methylaminocarbonyl or dimethylaminocarbonyl group or is substituted in the 2 or 3 position by an amino, methylamino, dimethylamino, N-methyl-benzylamino, piperidino or hexamethyleneimino group,

by a C_{1-3}-alkylaminocarbonyl or di-(C_{1-3}-alkyl)-aminocarbonyl group wherein a C_{1-3}-alkyl moiety may be substituted in the 2 or 3 position by a methoxy or dimethylamino group,

the isomers and the salts thereof.

Claim 15 (new): The compound of formula I according to claim 12, wherein

X denotes an oxygen atom

R_1 denotes a hydrogen atom,

R_2 denotes a hydrogen, chlorine or bromine atom, a methyl or nitro group,

R_3 denotes a phenyl group which may be substituted by a fluorine, chlorine or bromine atom, by a methyl, methoxy, aminomethyl, acetylaminomethyl, carboxy, methoxycarbonyl or imidazolylmethyl group,

R_4 denotes a hydrogen atom,

R_5 denotes a phenyl group which is substituted

by a fluorine, chlorine or bromine atom, by a methyl, methoxy, nitro, cyano or trifluoromethyl group,

by a methyl or ethyl group, each of which is substituted by a carboxy, C_{1-3}-alkoxycarbonyl, cyano, azetidin-1-yl, pyrrolidino, piperidino, 4-phenylpiperidino, 3,6-dihydro-2H-pyridin-1-yl, hexamethyleneimino, morpholino, thiomorpholino, 1-oxido-thiomorpholino, piperazino, 4-methylpiperazino or 4-acetylpiperazino group, while the abovementioned piperidino groups may additionally be substituted by one or two methyl groups or may be substituted in the 3 or 4 position by a hydroxy, methoxy, carboxy, hydroxymethyl, C_{1-3}-alkoxycarbonyl, aminocarbonyl, methylaminocarbonyl or dimethylaminocarbonyl group,

by a straight-chain C_{1-2}-alkyl group which is terminally substituted by an amino or benzylamino group, by a C_{1-4}-alkylamino group in which the alkyl moiety in positions 2, 3 or 4 may be substituted by a hydroxy or methoxy group, by a C_{1-2}-alkylamino group substituted in the C_{1-2}-alkyl moiety by a carboxy, C_{1-3}-alkoxycarbonyl or dimethylaminocarbonyl group, while in the abovementioned groups a hydrogen atom present at the amino nitrogen may additionally be replaced

by a C_{3-6}-cycloalkyl group, by a C_{1-4}-alkyl group in which the alkyl moiety may be substituted in positions 2, 3 or 4 by a hydroxy group, or by a C_{1-2}-alkylcarbonyl group optionally substituted by an amino, methylamino or dimethylamino group,

by a 3-dimethylamino-prop-1-enyl group,

by an ethyl group which is substituted in the 1-position by an amino or C_{1-4}-alkoxycarbonylamino group,

by an amino or C_{1-3}-alkylamino group in which the alkyl moiety may be terminally substituted by a carboxy, aminocarbonyl, methylaminocarbonyl or dimethylaminocarbonyl group or in the 2 or 3 position by an amino, methylamino, dimethylamino, acetylamino, N-acetyl-methylamino or morpholino group or by an N-(C_{1-3}-alkyl)-aminocarbonyl or N-(C_{1-3}-alkyl)-methylaminocarbonyl group optionally substituted in the 2 or 3 position by a dimethylamino group, while a hydrogen atom present at the amino nitrogen in the abovementioned groups may additionally be substituted

by a formyl or benzoyl group,

by a C_{2-4}-alkanoyl group which may be terminally substituted by an amino, acetylamino, pyrrolidino, piperidino, morpholino, piperazino or 4-methylpiperazino group or by a C_{1-3}-alkylamino, N-acetyl-C_{1-3}-alkylamino or di-(C_{1-3}-alkyl)-amino group, while in the abovementioned C_{1-3}-alkylamino, N-acetyl-C_{1-3}-alkylamino or di-(C_{1-3}-alkyl)-amino groups a C_{1-3}-alkyl moiety may additionally be substituted in the 2 or 3 position by a methoxy, dimethylamino or morpholino group,

by a C_{1-4}-alkylsulphonyl group which may be substituted in the 2 or 3 position by a dimethylamino group,

by a pyrrolidinosulphonyl group, an aminosulphonyl, C_{1-3}-alkylaminosulphonyl or di-(C_{1-3}-alkyl)-aminosulphonyl group, wherein in each case a C_{1-3}-alkyl moiety may be substituted by a carboxy, C_{1-3}-alkoxycarbonyl, aminocarbonyl, methylaminocarbonyl or dimethylaminocarbonyl group or, except in the 1 position, by a dimethylamino group,

by a C_{2-3}-alkoxy group which is substituted in the 2 or 3 position by a dimethylamino or piperidino group,

by an aminocarbonyl, C_{1-3}-alkylaminocarbonyl or di-(C_{1-3}-alkyl)-aminocarbonyl group, wherein in each case the C_{1-3}-alkyl moieties may be substituted by a methoxy or dimethylamino group, except in the 1 position,

the isomers and the salts thereof.

Claim 16 (new): The compound of formula I according to claim 12, wherein

X and R_2 to R_4 are as hereinbefore defined,

R_1 denotes a hydrogen atom and

R_5 denotes a phenyl group which is substituted

by a methyl or ethyl group, each of which is substituted by an azetidin-1-yl, pyrrolidino, piperidino, hexamethyleneimino, morpholino, 1-oxido-thiomorpholino, piperazino, 4-methylpiperazino or 4-acetylpiperazino group, while the abovementioned piperidino groups may additionally be substituted by one or two methyl groups or in the 4 position may be substituted by a hydroxy, methoxy,

hydroxymethyl, aminocarbonyl, methylaminocarbonyl or dimethylaminocarbonyl group,

by a straight-chain C_{1-2}-alkyl group which is terminally substituted by an amino group or by a C_{1-3}-alkylamino group, while the alkyl moiety of the C_{1-3}-alkylamino group may be substituted in positions 2 or 3 by a hydroxy or methoxy group and in the abovementioned groups the hydrogen atom present at the amino nitrogen may additionally be replaced

by a C_{3-6}-cycloalkyl group, by a C_{1-3}-alkyl group in which the alkyl moiety in positions 2 or 3 may be substituted by a hydroxy group, or by a C_{1-2}-alkylcarbonyl group substituted by an amino, methylamino or dimethylamino group,

by an ethyl group substituted in the 1 position by an amino group,

by an amino or C_{1-3}-alkylamino group in which the alkyl moiety may be terminally substituted by a carboxy, aminocarbonyl, methylaminocarbonyl, dimethylaminocarbonyl, N-(2-dimethylamino-ethyl)-aminocarbonyl or N-(2-dimethylamino-ethyl)-N-methyl-aminocarbonyl group or may be substituted in the 2 or 3 position by an amino, methylamino, dimethylamino, acetylamino, N-acetyl-methylamino or morpholino group, while the hydrogen atom present at the amino nitrogen of the abovementioned groups may additionally be replaced

by a C_{2-4}-alkanoyl group which may be terminally substituted by an amino, acetylamino, pyrrolidino, piperidino, morpholino, piperazino or 4-methylpiperazino group or by a C_{1-3}-alkylamino, N-acetyl-C_{1-3}-alkylamino or di-(C_{1-3}-alkyl)-amino group, while in the abovementioned C_{1-3}-alkylamino, N-acetyl-C_{1-3}-alkylamino or di-(C_{1-3}-alkyl)-amino groups a C_{1-3}-alkyl moiety may additionally be

substituted in the 2 or 3 position by a methoxy, dimethylamino or morpholino group,

by a C_{1-4}-alkylsulphonyl group which may be substituted in the 2 or 3 position by a dimethylamino group,

by a pyrrolidinosulphonyl group, an aminosulphonyl, C_{1-3}-alkylaminosulphonyl or di-(C_{1-3}-alkyl)-aminosulphonyl group, wherein in each case a C_{1-3}-alkyl moiety may be substituted by a carboxy, methoxycarbonyl, aminocarbonyl, methylaminocarbonyl or dimethylaminocarbonyl group or, except in the 1 position, by a dimethylamino group,

by a C_{1-3}-alkoxy group substituted in the 2 or 3 position by a dimethylamino or piperidino group,

by an aminocarbonyl, C_{1-3}-alkylaminocarbonyl or di-(C_{1-3}-alkyl)-aminocarbonyl group, wherein in each case a C_{1-3}-alkyl moiety may be substituted by a methoxy or dimethylamino group, except in the 1 position,

the isomers and the salts thereof.

Claim 17 (new): A pharmaceutical composition of matter comprising a compound of formula I as recited in Claim 12 wherein R1 denotes a hydrogen atom, a C_{1-3}-alkyl group or a prodrug group or a physiologically acceptable salt thereof, together with one or more inert carriers or dilutents.

Claim 18 (new): A method for protecting proliferating cells in a warm-blooded animal from DNA damage caused by radiation, UV treatment or cytostatic treatment which comprises administering to said animal a therapeutically effective amount of a compound as recited in Claim 12.

Claim 19 (new): A compound selected from the group consisting of:

(a) (Z)-3-[1-(4-dimethylaminomethyl-phenylamino)-1-phenyl-methylidene] 5-nitro-2-indolinone,

(b) (Z)-3-[1-(4-piperidinomethyl-phenylamino)-1-phenyl-methylidene]-5 nitro-2-indolinone,

(c) (Z)-3-{1-[4-(2-morpholinoethyl)-phenylamino]-1-phenyl-methylidene}-5-nitro-2-indolinone,

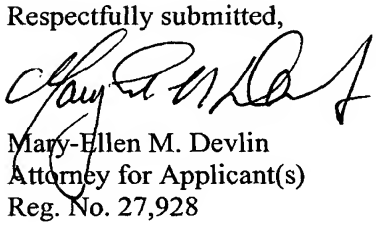
(d) (Z)-3-{1-[4-(2-dimethylamino-ethyl)-phenylamino]-1-phenyl-methylidene}-5-nitro-2-indolinone and

(e) (Z)-3-{1-[4-(N-(2-dimethylamino-ethyl)-N-methylsulphonyl-amino)-phenylamino]-1-phenyl-methylidene}-2-indolinone;

or a salt thereof.

Claim 20 (new): The physiologically acceptable salt of a compound as recited in claim 19.

Respectfully submitted,



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